

SECTION II—CLAIMS

1.-30. (Canceled)

31. (New) An evaporator, comprising

a base in which a cavity is defined within a peripheral portion thereof and configured to be thermally coupled to a semiconductor heat source;

a top cover secured to the peripheral portion of the base so as to define a sealed volume in which a working fluid is vaporized;

a liquid inlet port to receive the working fluid in a liquid state, operatively coupled to the sealed volume;

a vapor liquid inlet port from which the working fluid exits the evaporator in a vapor state, operatively coupled to the sealed volume; and

a wicking structure, disposed within a portion of the cavity, having a top surface on which a meniscus of the working fluid is formed and a bottom surface into which the working fluid is drawn through a capillary mechanism and a pressure differential between a pressure of the working fluid in the meniscus and a pressure of vaporized working fluid in the sealed volume.

32. (New) The evaporator of claim 31, further comprising a plurality of structural elements extending between the base and the top cover so as to prevent the sealed volume from collapsing when the evaporator is operated such that evaporation of the working fluid occurs under sub-atmospheric conditions.

33. (New) The evaporator of claim 31, wherein the wicking structure comprises a volume of a sintered material.
34. (New) The evaporator of claim 32, wherein the sintered material comprises a sintered copper.
35. (New) The evaporator of claim 31, wherein each of the base and the top cover comprise stamped metal components.